THE CITY OF SAN DIEGO

MANAGER'S REPORT

DATE ISSUED: March 27, 2002 REPORT NO. 02-066

ATTENTION: Natural Resources and Culture Committee
Agenda of April 3, 2002.

SUBJECT: Potential Impact on Grunion Spawning Resulting from Beach Maintenance Operations

SUMMARY

THIS IS AN INFORMATION ITEM ONLY. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

In April of 2001, the City Council directed the Manager to convene a task force, in partnership with Project Pacific, for the purpose of reviewing and examining the potential effect of the Park and Recreation Department's current beach maintenance practices (kelp raking, removal and sand grooming) on grunion spawning. The direction was given in response to inquiries received from private citizens who were concerned that the City's maintenance practices, which have been in place for more than 40 years, were harmful to grunion spawning. There are approximately 20.23 miles of sandy beaches within the San Diego City limits; Point Loma to Torrey Pines State Beach. Of that, 5.06 miles or 25% (specifically Ocean Beach, Mission Beach, Pacific Beach and La Jolla Shores) receive beach grooming services. The task force includes representatives from Project Pacific, Birch Aquarium, Scripps Institute of Oceanography, U.S. Fish and Wildlife Service, California Department of Fish and Game, National Marine Fisheries Service, UCSD, SDSU, Pepperdine University, University of California at Santa Barbara and City staff. The task force has met five times from May 16, 2001 to January 17, 2002.

DISCUSSION

Grunion spawning normally occur from Point Conception, California to Point Abreojos, Baja California. The spawning season extends from March through August with the peak season between late March and early June. Once mature, an individual grunion may spawn during successive runs at about 15 day intervals. Females can spawn as many as six times during a season. Mature females lay between 1,600 and 3,600 eggs during one spawn. The eggs are

deposited during the highest tides of the month and incubate in the sand during the lower tide levels. The eggs are kept moist by residual water in the sand. Eggs hatch during the next high tide series when they are inundated with sea water and agitated by the rising surf; this occurs after ten days.

The Park and Recreation Department's beach maintenance operations include: litter removal, refuse container servicing, fire ring cleaning, graffiti control, kelp removal, dead mammal removal, general debris removal, sand raking, sand screening, and construction of winter storm protective sand berms. In performing its duties, the department utilizes a series of mechanized equipment that include: nine front end loaders, four agricultural tractors, five tow behind sand screens, eight tow behind beach rakes, nine dump trucks and three refuse packers.

Kelp is removed using metal rake attachments to gather into piles and front loaders to remove from the sand and into dump trucks. Kelp is transported to a holding area within Fiesta Island where it naturally decomposes. Residual sand is eventually returned to its origin and is also used to construct winter sand berms. Kelp removal frequency varies from beach to beach and is influenced by the nature of the beach, i.e., topography, beach characteristics such as shape and ocean bottom contours, offshore conditions and storms. On the average, however, beaches are raked weekly. The majority of other maintenance activities occur between Monday and Friday with litter removal performed seven days per week. Approximately 35,000 (long term average) tons of kelp are removed annually from the groomed beaches.

Beach grooming procedures during grunion spawning season are as follows: the first weekday (beaches are not groomed during weekends) after a grunion spawn, beach maintenance staff visually inspect and determine the apparent high tide line. Kelp removal occurs around the high tide line and does not exceed one pass width (approximately eight feet) below that line. The rake is set at sand level to effectively remove kelp from the surface. The material is piled and loaded from a position above the high tide line.

Until now, a scientific study has not existed which examined the potential effect of the City's beach maintenance practices on grunion spawning. Project Pacific, with help from the Birch Aquarium at Scripps, is currently coordinating a volunteer monitoring effort to identify locations of spawning activity and collect information during grunion runs. A National Fish and Wildlife Foundation (NFWF) "Challenge Grant" of $18,698 is pending to help fund the project. In addition, Karen Martin, Ph.D., Pepperdine University, with assistance from City staff and guidance from Scripps Institution of Oceanography scientists, is leading a research study to assess the potential impact of beach grooming operations on grunion spawning. Dr. Martin will use information provided by the volunteer observers to locate grunion eggs to examine in her study. Dr. Martin's study is funded by a $9,995 Rapid Response Sea Grant, and partially by the NFWF grant. The overall project began February 27, 2002 and may conclude in early September of this year. Upon completion, the task force will evaluate the study findings and return to the Committee with appropriate recommendations.

A concurrent study funded by a California Sea Grant ($112,414) entitled "Ecological Effects of Beach Grooming on Exposed Sandy Beaches," is being conducted by Drs. J. Dugan, M. Page and A Wenner of the Marine Science Institute of the University of California, Santa Barbara. This study is investigating effects of beach grooming in San Diego County and other coastal counties of southern California by comparing groomed and ungroomed beaches and conducting experiments on the effects of kelp removal. It was initiated in the summer of 2001 and will continue through the summer of 2004.

The task force has made excellent progress in gathering and sharing information and developing an overall strategy to address this issue. The aforementioned scientific study will provide the needed analysis enabling the task force to develop appropriate recommendations for the Committee's future consideration.

Respectfully submitted,

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Approved: Bruce Herring
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